

REMARKS/ARGUMENTS

Applicant would like to thank the Examiner for the careful consideration given the present application. The application has been carefully reviewed in light of the Office Action, and the following remarks are presented for the Examiner's consideration.

Claims 1-5, 7, 12-16, 36 and 46-53 are rejected under 35 U.S.C. 102(b) as being anticipated by Dane (U.S. Patent No. 6,655,954), hereinafter "Dane-1". Claims 2, 5, 12, 15, 16, and 36 have been cancelled and claims 46-48 have been amended to depend from claim 42. Dane-1 fails to disclose the limitation that "an internal aperture, at least some of the flame ports being oriented towards the internal aperture, each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture" as claimed in claim 1.

The Examiner alleges that Dane-1 discloses inwardly extending arms (18) *and* outwardly extending arms (17). Applicant disagrees and submits that Dane fails to disclose inwardly projecting arms. Dane-1 discloses outward extending arms or "lobes 17", but it does not simultaneously disclose inward extending arms. See col. 4, lines 17-28. Dane-1 discloses inward extending recesses or "concave zones 18" at col. 4 lines 12-34 and col. 4, lines 63 to col. 5, line 3.. Applicant respectfully submits that shifting the reference point to a point where both inward and outward extending arms are provided. This reference point is that the of the gas supply convergence chamber 3, where the arms 17 radiate out from the gas supply port. Clearly the recesses 18 are not inwardly projecting arms to the gas supply. A geographical analogy is the difference between a peninsula and a bay, the peninsula being equivalent to an arm 17 and the

bay being equivalent to the inward recess 18. Applying this analogy, the new claim 1 defines inward projecting peninsulas while Dane-1 discloses inwardly directed bays 18. It is impossible for Dane-1 to disclose inwardly projecting arms, because Dane-1 fails to disclose an inner aperture.

Accordingly, as Dane-1 fails to disclose the claimed limitation that “an internal aperture, at least some of the flame ports being oriented towards the internal aperture, each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture,” Dane-1 fails to anticipate the claimed invention.

Claims 2, 4, 7, 13, 14, 17-20, 49 and 51-53 depend directly or indirectly on claim 1, and thus are patentable for at least the same reasons as the parent claim.

With further reference to claim 7, it defines an internal *aperture* having “a clover leaf configuration”. Dane-1 fails to disclose such an aperture. The four-spoked device of Fig. 1 of Dane-1 is covered by “cover 7 [which] delimit the orifices”. See col. 3, lines 46-47. In addition, the shape of Dane-1 is not a clover leaf, which requires convex projections or “leaves”, while Dane-1 discloses concavo-convex projections or “leaves”.

With reference to claims 20-22, claim 20 includes the limitation of “[the] distribution channel has one or more occluding structures”. The Examiner alleges that the feature 30 of Dane-1 is an occluding structure. Dane-1 describes feature 30 as “the connecting zones where the divergence chamber 6 extends up to the peripheral wall 9”. See Dane-1 at col. 3, lines 50-52. Dane-1 fails to disclose that the connecting zones 30 act as occluding structure for directing or

baffling gas flow to the flame ports. Therefore, Dane-1 fails to disclose that “[the] distribution channel has one or more occluding structures” and thus, fails to anticipate claim 20.

Claims 37-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Halsey et al. (U.S. Patent No. 6,663,025), hereinafter “Halsey”.

Halsey fails to disclose “a manifold for a gas burner said manifold having an upper wall and a lower wall held in spaced apart relationship by a peripheral wall to define a cavity there between said manifold including means to mount at least one injector so as to deliver an air gas supply” as claimed in claim 37. Halsey discloses a plasma diffuser having a body and a reflector designed to slow the speed of the plasma on discharge from the nozzle. Applicant asserts that the walls 411 and 406 fail to define a cavity as they are the walls of a solid reflector. Additionally, Halsey fails to disclose a manifold. Simply stated, the upper and lower walls of 406 and 411 of Fig. 4A of Halsey are walls of a solid body and fail to disclose a cavity therebetween.

Furthermore, the apparatus of Halsey does not disclose a “gas burner” as Halsey is a plasma nozzle in which the plasma is formed prior to injection into the nozzle. Therefore, Halsey fails to anticipate claim 37.

Claims 38-41 depend directly or indirectly on claim 37, and thus are patentable for at least the same reasons as the parent claim.

Claims 42-45 and 54-59 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang (U.S. Patent No. 5,842,849), hereinafter “Huang”.

Regarding claims 42-45, Huang fails to disclose “discrete distribution chambers” and venturi systems as claimed in claim 42. Huang discloses simple open cavities without gas

channels, which the Examiner alleged as disclosing “discrete distribution chambers”. Applicant asserts that one of ordinary skill in the art would not interpret open cavities lacking gas chambers as disclosing “discrete distribution chambers”. Additionally, Huang discloses gas supply tubes 17, which fail to disclose the limitations involving venturi systems. Accordingly, as Huang fails to disclose “discrete distribution chambers” and venturi systems as claimed in claim 42, Huang fails to anticipate claim 42.

Claims 43-45 depend directly or indirectly on claim 42, and thus are patentable for at least the same reasons as the parent claim.

Regarding claims 54-59, it is alleged by the Examiner that Huang anticipates all the claimed limitations of claim 54. However, the Examiner fails to provide specific reasoning using Huang for the allegation. But the Examiner did cite an additional reference to allege anticipation of claims 54-59 (Schlosser et al., U.S. Patent No. 6,244,263). Applicant is assuming that the Examiner’s original intention was to use Schlosser for claims 54-59 and Huang for claims 42-45.

Schlosser fails to disclose “at least *two venturis* with each venturi having a respective injector associated therewith located internally of and near to a wall portion of said distributor, said distributor including at least two generally elongated air inlet ports which are located in said wall, said ports having a longitudinal axis which extends circumferentially around said distributor” as limited in claim 54. Schlosser only discloses a single venturi system with an outwardly directed burner disc with no inner aperture. Thus, Schlosser fails to anticipate claim 54.

Claims 55-57 depend directly or indirectly on claim 54, and thus are patentable for at least the same reasons as the parent claim.

Claims 60-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Dane (French Patent No. 2,770,620), hereinafter “Dane-2”.

Dane-2 fails to disclose or suggest “occluding structures associated there with for directing and or baffling said air gas mixture” as claimed by claim 60. The Examiner alleges that Dane-2 discloses occluding structure by stating “orifices sortie de flames 39, 41...” which translates to “flame outlets”. One of ordinary skill in the art would not interpret flame outlets as disclosing “occluding structures”. As a result, Dane-2 fails to anticipate claim 60. And as claims 61-68 depend directly or indirectly on claim 60, they are patentable for at least the same reasons as the parent claim.

Claims 6, 8-11, 23-31 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dane-1 (6,655,954) further in view of Huang (5,842,849). Claim 23 has been cancelled and claims 69-72 have been amended to depend from claim 42. As a result, only claims 6, 8-11, 24-31 and 35 depend from claim 1.

As claims 6, 8-11, 24-31 and 35 depend either directly or indirectly on claim 1, and as argued above, Dane-1 fails to disclose the limitation that “an internal aperture, at least some of the flame ports being oriented towards the internal aperture, each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture” as claimed in claim 1. Additionally, Huang fails to disclose “the flame ports being oriented towards the internal aperture” as claimed in claim 1. Thus, the combination of Dane-1

and Huang fails to teach, suggest or otherwise render obvious or predictable every limitation of the claimed invention. Accordingly, the prior art of record fails to render claims in claims 6, 8-11, 24-31 and 35 obvious.

Claims 13-15, 50 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dane-1 (6,655,954). Claim 15 has been cancelled.

Regarding claims 13 and 14, which depend from claim 1, Dane-1 fails to disclose the limitation that “an internal aperture, at least some of the flame ports being oriented towards the internal aperture, each distribution chamber including at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture” as claimed in claim 1. As Dane-1 fails to teach, suggest or otherwise render obvious all the limitations of claim 1, Dane-1 fails to render claims 13 and 14 obvious.

Regarding claims 50 and 53, which depend from claim 42, Dane-1 fails to disclose “each of said chambers having a transversely extending portion which extends inwardly towards the centre of said burner” as claimed in claim 42. Applicant respectfully submits that the arms 17 radiate out from the gas supply port. This would clearly indicate that the recesses 18 are not inwardly projecting arms to the gas supply. Thus, Dane-1 fails to teach, suggest or otherwise render obvious all the limitations of claim 42, Dane-1 fails to render claims 50 and 53 obvious.

Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dane-1 further in view of Halsey. Claims 32-34 depend either directly or indirectly on claim 1. And as argued above, Dane-1 fails to disclose the limitation that “an internal aperture, at least some of the flame ports being oriented towards the internal aperture, each distribution chamber including

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at least one transversely projecting distribution channel which projects into the aperture, the transversely projecting channel including flame ports adapted to direct combustion gasses into the aperture” as claimed in claim 1. Additionally, these limitations are not taught or suggested in the disclosure of Halsey. Therefore, even in Dane-1 were combined with Halsey, every limitation of claim 1 would not be taught, suggested, or otherwise rendered obvious or predictable by the resulting combination. Thus, the prior art of record fails to render claims 32-34 obvious.

Applicant respectfully asserts that new claims 73-80 are neither anticipated nor obvious by the prior art of record.

CONCLUSION

In consideration of the foregoing analysis, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

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If there are any fees resulting from this communication, please charge same to our
Deposit Account No. 16-0820, our Order No. ABE-40943.

Respectfully submitted,

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